

Activation Conjugation Sentrinization De-sentrinization

FIG. 1. Sentrinization and de-sentrinization pathway.

FIG. 2

1 acctagcgactcttccgggtgctgtgaaggcggttccgggttcgcgcggttccgggtttt
61 gcggtccgcgccccggcgaaaccccttcgcatggcagcggttccgggttcggaacttgt
121 atctttgctaaagtcagtgatgtgaaaagacttgaaatggatgatattgctgataggatg
M D D I A D R M 8
181 aggatggatgctggagaagtgaacttttagtgaaccacaactccgtattcaaaacccacctc
R M D A G E V T L V N H N S V F K T H L 28
241 ctgccacaaacaggttttccagaggaccagcttttcgctttctgaccagcagattttatct
L P Q T G F P E D Q L S L S D Q Q I L S 48
301 tccaggcaaggacatttggaccgatcttttacatgttccacaagaagtcagcttataat
S R Q G H L D R S F T C S T R S A A Y N 68
361 ccaagctattactcagataatccttctcagacagttttcttggtcagggcagtttaaga
P S Y Y S D N S P S S D S F L G S G D L R 88
421 acctttggccagagtgc aaatggccaatggagaaattctaccccatcgtaagctcatct
T F G Q S A N G Q W R N S T P S S S S S 108
481 ttacaaaaatcaagaacagccgaagtctttacctcgaaacccgaaagacctcaagtggga
L Q K S R N S R S L Y L E T R K T S S G 128
541 ttatcaaacagttttgcgggaaagtcaaaccatcactgccatgtatctgcatatgaaaaa
L S N S F A G K S N H H C H V S A Y E K 148
601 tcttttctattaaacctgttccaagtccatcttggagtgggtcatgtcgtcgaagtctt
S F P I K P V P S P S W S G S C R R S L 168
661 ttgagccccaaagaaactcagaggcgacatgttagtacagcagaagagacagttcaagaa
L S P K K T Q R R H V S T A E E T V Q E 188
721 gaagaagagagatttacagacagctgtacagatgggtcacagggaacagtttactata
E E R E I Y R Q L L Q M V T G K Q F T I 208
781 gccaaaccaccacacattttctttacacctgtctcgatgtcttagttccagtaaaaaat
A K P T T H F P L H L S R C L S S S K N 228
841 actttgaagactcactgttttaaaatggaaactcttgcattcagatcattggctct
T L K D S L F K N G N S C A S Q I I G S 248
901 gatacttcacatctggatctgccagcattttaactaaccaggaacagctgtccacagt
D T S S S G S A S I L T N Q E Q L S H S 268
961 gtatatccctatcttcttataccccagatgttgcatgttgatccaaagattctggtact
V Y S L S S Y T P D V A F G S K D S G T 288
1021 cttcatcatccccatcatcaccactctgttccacatcagccagataacttagcagcttca
L H H P H H H S V P H Q P D N L A A S 308
1081 aatacacaatctgaaggatcagactctgtgattttactgaaagtgaagattcccagact
N T Q S E G S D S V I L L K V K D S Q T 328
1141 ccaactcccagttctacttttccaggcagagctgtggatcaaagaattaactagtgtt
P T P S S T F F Q A E L W I K E L T S V 348
1201 tatgattctcgagcacgagaagattgcccagatgaagaacagaaggcattggcctta
Y D S R A R E R L R Q I E E Q K A L A L 368
1261 cagcttcaaaacagagattgcaggagcggaacattcagtagattcagtagaacta
Q L Q N Q R L Q E R E H S V H D S V E L 388
1321 catcttcgtgtacctcttgaaaggagattcctgttactgttgcgaagaaacacaaaaa
H L R V P L E K E I P V T V V Q E T Q K 408
1381 aaaggtcataaataactgatagtgaaagtgaatttccgtgaaattacagaggaaatggag
K G H K L T D S E D E F P E I T E E M E 428
1441 aaagaaataaagaatgtatttcgtaatgggaatcaggatgaagttctcagtgaaagcattt
K E I K N V F R N G N Q D E V L S E A F 448
1501 cgcctgaccattacacgcaaatgatttcaaaactctaaaccatctgaattggctcaatgat
R L T I T R K D I Q T L N H L N W L N D 468
1561 gagatcatcaatttctacatgaatatgctgatggagcgaagtaagagaagggttgcca
E I I N F Y M N M L M E R S K E K G L P 488
1621 agtgtgcattgcaatttaataccttttcttactaaattaaaaacggctggttatcaggca
S V H A F N T F F F T K L K T A G Y Q A 508
1681 gtgaaacgttggacaagaagtagatgtattttctgttgacattcttttggtgcccatt
V K R W T K K V D V F S V D I L L V P I 528
1741 cacctgggagtacactgggtgtctagctgttggactttagaagaagaatattacctat
H L G V H W C L A V V D F R K K N I T Y 548
1801 tacgactccatgggtgggataaacaatgaagcctgcagaataactcttgcaataacctaaag
Y D S M G G I N N E A C R I L L Q Y L K 568
1861 caagaagcatttgacaagaaaaggaaagatttgacaccaatggctggcagcttttcagc
Q E S I D K K R K E F D T N G W Q L F S 588
1921 aagaagaagccagattcctcagcagatgaatggagtgactgtgggatgtttgctgcaaa
K K S Q I P Q Q M N G S D C G M F A C K 608
1981 tatgctgactgtattaccaagacagaccaatcaacttcacacagcaacacatgccatac
Y A D C I T K D R P I N F T Q Q H M P Y 628
2041 ttccggaagcggtggtctgggagatcctccaccgaaaactcttggaagactgtctcac
F R K R M V W E I L H R K L L * 643
2101 ttagcagaccttgaccatgtgggggaccagctctttgtgtctacagccagagaccttg
2161 aaacagctgtctccagccctctgctgttgaacaccccttgatcctggaccagccctggc
2221 gagatgcattcacaagcacatctgcctttcttttgatctcagatactatttttgcaa
2281 gaaactttggtgctgtgaaaggggtgaggacatccctaagctgaagagagagactgctt
2341 ttcacttctcagttctgccatcttgttttcaagggtccagcctcactcagtccttaa

2401 ttatgggactgagaaaagcttggaaagaatcttgggttcatataaattcttgtttagg
2461 Ccttactaagaagtaggaaaggcatgggcaaaggtagggataaaaaccac

LG990508-1

HsUlp1	MAEDGVRGSPVPVSGPPMEETGLAWTPKSPLDPDSSLSCSTLPNGFGGQSGPEGERSLAP	60
Ulp1	MSVEVEKHNNTLQYHKKNPYSPFSEISTYRCYPRVLDNNPS-ESR	44
SEN1	MDDIADRMMEAGEVTLVNHNSVFKTHLL-PQTGFPEQLSLSDQQILSS	49
HsUlp1	PDASILINVCISGDHVAQELFQGSDELQWAEAEERPGEKA-EC-----	102
Ulp1	RSASFSGIYKKRNTSRFNYNDRRLSMESMKDGSIDASKAGFICGIRETLWNSGKYL	104
SEN1	RQGHLDREFTCSTRSAAYNPSYSDNHSSDSFLGSDLRTPQSANGQWNSSTPSSSSSL	109
HsUlp1	-----	102
Ulp1	WHTFVKNEPRNFD-----GSEVEASGNSDVESRSSGSRSS---DVSYGL-----SENYS	150
SEN1	QKSRNSRSLYLETRKTSSCLNSSFAGKSNHHCHVSAYEKSFPPIKPVSPSWSGSCSRSL	169
HsUlp1	-----	102
Ulp1	SDTRKHKFDTSWALPNKRRRI-SE-----GVGTPSTS-ISSLASQKSNCDSDNSIT	202
SEN1	SPKKTQRRHVSTAEETVQEEEREIYRQLLQMVTKQOPTIAKETTHFPLHLRCLSSSKNT	229
HsUlp1	-----	102
Ulp1	FSDRDF-GWKKWKTSAIGSNSENNTSDQKNSYDRRQYGTAFIRKK---KVAKQINNTKL	258
SEN1	LKDSLFGKNGNSCASQILGSDTSSSGSASILTNQEQLSHSVYLSSTYTPDVAFGSKDSGT	289
HsUlp1	-----	102
Ulp1	VSRAQSEETYLRLQIFNGEYKVPKILKEERERQLKMDMDKEKDTGLKKSIIIDLTEK-IK	317
SEN1	HHPHHHSVPH-----QPDNLASNTQSEGSDSVILKLV-KDSQITPSTSTFFQALWIK	343
HsUlp1	-----	126
Ulp1	TIL-IENKNRLQTRNENDDLVVFVKEKKISSLERKHKDYLNQKLKFDRLSEFEKDFKR	376
SEN1	ELTSVYDSRARERLRQIEEQKALALQLNQRLQERFHSVHDSVELHL-RVPLEKEI----	398
HsUlp1	SLIFLSTDEVV-EKLEDIFQOEFSTPSRKGLVLQLIQSYQRMPCNAMVRGFRVAYKEHVL	185
Ulp1	YNEILNERKKIQEDLLKKKKEQLAKKKLVPELNEKDDQVOKALASRENTQ-LMNRDNIEI	435
SEN1	-----PVTIVVQETQKKGHKLTLSDEFEPEITTEMEKEIKNVFRNGNQDEVLSAEFLTI	452
HsUlp1	TMDLGLTLYGQNLNDQVMMMGDLVMDTVPEK---VEFFNSFFYDKLRITKGYLGVKRM	241
Ulp1	TVREFKTLAPRFLNDITIEFEKYYI-----EKSTNTVAFNSFFYTILSERGYQGVRR	490
SEN1	TRKDIQTNHLNWLNDIINFYNNMLERSKEKGLPSVHAFNTFFFTKLKTAGYQAVKRW	512
HsUlp1	TR--NVDIENKELLIPIHLEW-HWSELISVDVERRTITYFDSQRTLNRRCPKHIAKFLQA	298
Ulp1	MKRKKTQEDKLDKIETPINLNOSHVALGIIDLKKTICGYVDSLNGFNAMSFAILLTDLOK	550
SEN1	TR--KVDVESVDIILLVPIHLQW-HVCLAVVDFFKKNTIYYDSMGGINNEACRILLQYLKQ	569
Ulp1	EAV-KKDRLDFHQCCKGYFK-MNVARONNDSCGAFLQVCKHLALSQFFSETOODMPKL	356
Ulp1	YVMEESKH---HIGEDFDLIHLDCPOOPNGYDCGIYVCMNTLYGSADAPLDFDYKDAIRM	607
SEN1	ESIDKRRKEFDINGQLFSKKSQIPQOMNGSDCCMEACKVADCITKDRPINEETOCHMPYF	629
HsUlp1	RRQHYKELCECKITV	371
Ulp1	RRFHAHLILLTDAEK	621
SEN1	EKRMVWETLHRKIL	643

FIG. 3

FIG. 4A.

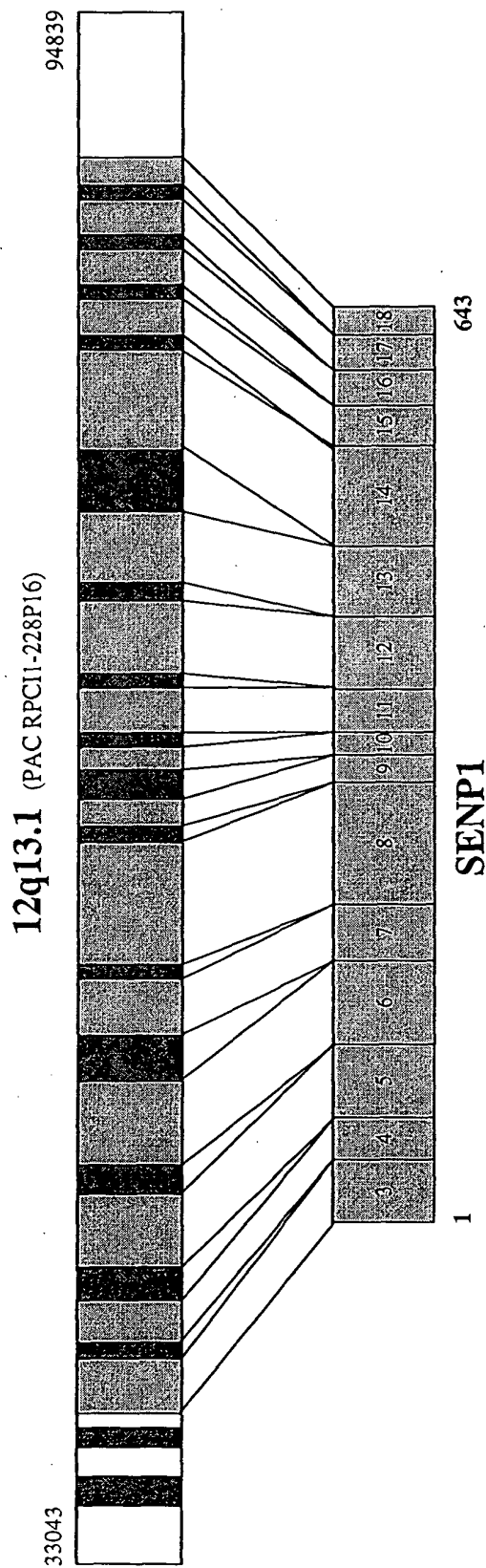


FIG. 4B.

EXON No.	Length (bp)	5'Splice donor	Intron length(kb)	3'Splice acceptor
1	112	GGTTCG GTGAGT	4.4	TTATAG GACTTT
2	47	AAATGG GTAAGA	3.4	CCCCAG ATGATA
3	132	CAGCAG GTTAGG	1.5	GTTTAG ATTTTA
4	85	ACTCAG GTATGA	7.3	TTTTAG ATAAATC
5	160	CTCAAG GTTCGT	5.0	TTTTAG TGGATT
6	172	GAGGAG GTAAGG	8.7	TTATAG ACAGTT
7	104	ACACCT GTGAGT	0.08	TGCTAG GTCTCG
8	284	CTGAAG GTAAC	2.6	TCTTAG GATCAG
9	55	TCCCAG GTAAC	4.7	CCATAG TTCTAC
10	39	AGAAAT GTAAGT	1.2	TTCTAG AACTAG
11	85	AACGAG GTAATA	0.37	TTTCAG AGATTG
12	156	ACAGAG GTAAGT	1.2	CTCAAG GAAATG
13	132	GATGAG GTAATG	14.4	CCACAG ATCATC
14	204	AGCTGT GTGAGT	0.84	TCTCAG GTTGTG
15	80	ACTCTT GTAAGT	0.94	CTTTAG GCAATA
16	85	AGCCAG GTACCT	0.53	CAGGAG ATTCCCT
17	93	ACACAG GTGAGC	0.97	CTACAG CAACAC
18	487			

Fig. 5A

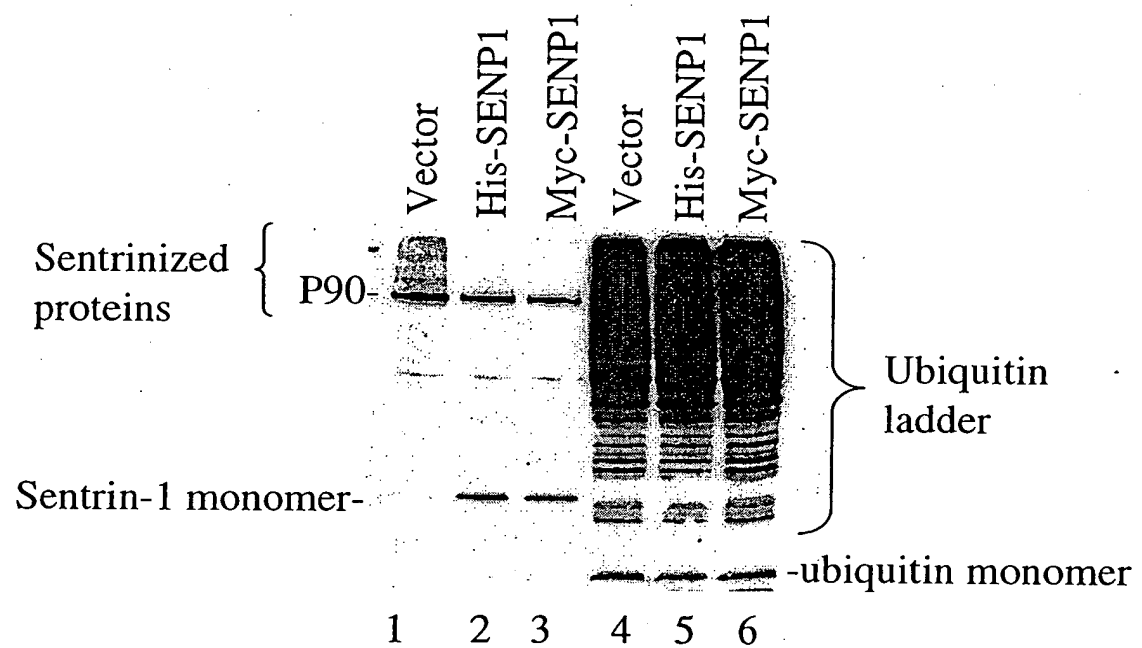


Fig. 5B

